1. PRODUCT AND COMPANY IDENTIFICATION

Product name: THINSET® HARDENER  
Product type: Hardener for epoxy resin

Company address: Ergon Armor  
Corrosion Engineering  
300 Stevens Drive, Suite 310  
Lester, PA 19113

ID(s): 50210

2. HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW**

**Physical state:** Viscous liquid
**Color:** Amber
**Odor:** Strong fish-like odor

**HMIS:** Not established for this product
**HEALTH:**
**FLAMMABILITY:**
**PHYSICAL HAZARD:**

Personal Protection: See MSDS section 8

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

* = Chronic Health Hazard

**WARNING!** CAUSES RESPIRATORY TRACT IRRITATION. CAUSES EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY CAUSE NAUSEA, HEADACHE OR DIZZINESS.

**Relevant routes of exposure:** Skin contact and inhalation.

**Potential Health Effects**

**Inhalation:** Inhalation of this material has caused respiratory tract irritation and, at higher exposures, severe irritation, drowsiness, blurred vision, headache, nausea, dizziness, stupor and loss of consciousness may occur.

**Skin contact:** Severely irritating to the skin. Can cause burns and irreversible tissue damage. Repeated contact may cause dermatitis (inflammation of the skin) and allergic skin reaction in susceptible individuals.

**Eye contact:** Severely irritating to the eyes. Can cause burns and irreversible tissue damage.

**Ingestion:** Although swallowing of this material is unlikely in the industrial setting, if swallowed this material may cause internal injury characterized by pain in the mouth and digestive tract, vomiting and collapse.

**Existing conditions aggravated by exposure:** Workers with lung disease or reduced lung capacity should have limited exposure to this material.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). See Section 11 for additional toxicological information.
3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>CAS-No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines</td>
<td>68410-23-1</td>
<td>85 - 95</td>
</tr>
<tr>
<td>2,4,6-Tri(dimethylaminomethyl) phenol</td>
<td>90-72-2</td>
<td>5 - 10</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Skin contact: Immediately flush with plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Destroy contaminated shoes.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. Get medical attention immediately.

Ingestion: Do NOT induce vomiting. Give water to drink. Get medical attention immediately. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

5. FIRE FIGHTING MEASURES

Flash point: 204°F (TOC)

Autoignition temperature: NE

Flammable/Explosive limits - lower: NE

Flammable/Explosive limits - upper: NE

Extinguishing media: Use water spray, carbon dioxide, foam or dry chemical.

Special firefighting procedures: Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand NIOSH approved or equivalent). Fire fighting equipment should be thoroughly decontaminated after use.

Unusual fire or explosion hazards: Avoid breathing fumes from fire exposed material.

Hazardous combustion products: NE

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Avoid runoff into storm sewers and ditches which lead to waterways.

Clean-up methods: Isolate hazard area and deny entry to unnecessary or unprotected personnel. Contain spilled liquid with sand or earth. Clean up spill immediately, observing precautions in the Personal Protection section of MSDS.

Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

7. HANDLING AND STORAGE

Handling: Do not get in eyes, on skin or clothing. Avoid breathing vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Empty container may contain hazardous residues.
Storage: Avoid excessive heat. Store out of direct sunlight in a cool, well-ventilated place. Store in a cool, dry place.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>AIHA WEEL</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td></td>
</tr>
<tr>
<td>2,4,6-Tri(dimethylaminomethyl) phenol</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td></td>
</tr>
</tbody>
</table>

Engineering controls: Investigate engineering techniques to reduce exposures. Provide ventilation if necessary to minimize exposures. If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment. Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

Respiratory protection: Avoid breathing vapor or mist. When airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

Eye/face protection: Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment available.

Skin protection: Neoprene or Natural rubber gloves should be worn when handling this material. Wear face shield and chemical resistant clothing such as a rubber apron when splashing may occur. Wash contaminated clothing and clean protective equipment before reuse. Rinse contaminated skin promptly. Wash skin thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

| Physical state: | Viscous liquid |
| Color: | Amber |
| Odor: | Strong fish-like odor |
| Odor threshold: | NE |
| pH: | NA |
| Vapor pressure: | <1 @ 20 deg C |
| Boiling point/range: | >404°F |
| Melting point/ range: | NA |
| Specific gravity: | 0.98 @ 20/20 deg C |
| Vapor density: | Heavier than air |
| Flash point: | 204°F (TOC) |
| Flammable/Explosive limits - lower: | NE |
| Flammable/Explosive limits - upper: | NE |
| Autoignition temperature: | NE |
| Evaporation rate: | NE |
| Solubility in water: | Partially soluble |
| Partition coefficient (n-octanol/water): | NA |
| VOC content: | Nil |
10. STABILITY AND REACTIVITY

Stability: This material is chemically stable under normal and anticipated storage and handling conditions.

Hazardous polymerization: Not known to occur

Hazardous decomposition products: Oxides of carbon and nitrogen.

Incompatibility: Avoid contact with strong acids, alkalis, and oxidizers. Contact with chlorinated compounds results in the release of toxic gases. Contact with epoxy resin results in an exothermic reaction.

Conditions to avoid: NE

11. TOXICOLOGICAL INFORMATION

Toxicological Information
Data available for this material and/or its components are summarized below:

General Product Information:
Not available

Component Data:

2,4,6-Tri(dimethylaminomethyl) phenol
LD50/LC50:
Single exposure (acute) studies indicate that this material is slightly toxic to rats if swallowed (LD50 1,200 mg/kg) or inhaled (LD50 1,280 mg/kg), and severely irritating to rabbit eyes and skin (4-hr exposure; 24-hr exposure, 7.6/8.0).

MUTAGENICITY:
This material produced no genetic changes in a standard test using bacterial cells.

Cancer Lists

<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>NTP Carcinogen</th>
<th>IARC Carcinogen</th>
<th>OSHA Carcinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2,4,6-Tri(dimethylaminomethyl) phenol</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Health Effects

<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>Health Effects / Target Organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatty acids, C18-unsatd., dimers, reaction products with polyethylenepolyamines</td>
<td>NE</td>
</tr>
<tr>
<td>2,4,6-Tri(dimethylaminomethyl) phenol</td>
<td>NE</td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION

Ecotoxicological Information
Data available for this material and/or its components are summarized below:

General Product Information:
Not available

Component Data:
Not available
13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of

NE

Recover, reclaim or recycle when practical. Dispose of in accordance with federal, state and local regulations. Empty containers retain product residue. Note: Chemical additions to, processing of, or otherwise altering this material may render information in this document to be incomplete, inaccurate or otherwise inappropriate for waste management purposes. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

Disposal Regulatory

NE

It is the responsibility of the waste generator to determine if the waste meets the definition of a hazardous waste as promulgated at 40 CFR Part 261 subpart C.

14. TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Not regulated

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

SARA 311/312: Immediate (Acute) Health hazard

Applicable component data listed below:

| TSCA 12(b) Export Notification | None listed |
| CERCLA/SARA Section 302 EHS | None listed |
| Section 304 EHS RQ | None listed |
| CLCRA RQ | None listed |
| Section 313 | None listed |
| RCRA CODE | None listed |
| CAA 1129(r) TQ | None listed |

Canada Regulatory Information

| 2,4,6-Tri(dimethylaminomethyl) phenol | Disclosure (1%) | D2B |
16. OTHER INFORMATION

Revision Information

Revision Date: 8/17/2010
Supersedes Revision Dated: 6/15/2006
Revision Number: 2.000
Revision Summary: New format

Key: NE = Not Established, NA = Not Applicable

Prepared by: R. Forsythe

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Ergon Armor does not assume responsibility for any results obtained by persons over whose methods Ergon Armor has no control. It is the user's responsibility to determine the suitability of Ergon's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any of Ergon Armor's products. In light of the foregoing, Ergon Armor specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Ergon Armor's products. Ergon Armor further disclaims any liability for consequential or incidental damages of any kind, including lost profits.